

Light and Lighting

Vol. XLV.—No.10.

October, 1952

One Shilling and Sixpence

Contents

	Page
Editorial	333
Notes and News	334
Cold Cathode Lighting in Shops and Stores	337
Neon Signs and Lighting for Shops	341
Dolcis Shoe Shops	348
Recent Street Lighting Installations	355
S.B.A.C. Display and Exhibition, 1952	358
Correspondence	360
Reviews of Books	361
I.E.S. Activities	363
Postscript	368
Index to Advertisers	xx

The Universe of Discourse

PERUSAL of the programme of meetings of the Illuminating Engineering Society during the session which commences this month shows that more than seventy different lighting topics form the subjects of papers to be read in London and the various provincial centres of the Society. Remarkable as this is, it need hardly be said that these papers are very far from covering the universe of discourse about lighting, although such an array in a single session is evidence not only of the virility of this Society but also of its constant endeavour to serve the interests of all its members. An event unique in the history of the Society will be the discourse in January next by the President of the Royal Society, Dr. E. D. Adrian, O.M., on the nervous reactions of the retina—a subject which should be of the greatest interest to everyone who is professionally engaged in lighting human eyes, as every lighting engineer is. But, besides this, there is in the general programme a reasonable leavening of papers concerned with the psychophysiology of vision—from which, of course, the fundamental principles of good lighting derive.

Published monthly by the Illuminating Engineering Publishing Co., Ltd., at 32, Victoria St., London, S.W.1. Telephone ABBey 7553. Subscription rate £1 per annum.

The official journal of the Illuminating Engineering Society.

Notes and News

I.E.S. President 1952-53

With the opening of the I.E.S. Session this month Dr. W. J. Wellwood Ferguson takes office as President. Dr. Ferguson is one of the few ophthalmologists who take an interest in lighting and is the second of his profession to become President, the first being Sir John Parsons, who was President from 1921 to 1923. In the early days of the Society the ophthalmologists were well represented amongst members and many of the earlier papers and discussions were on lighting and vision. Since the 1920s, however, it would seem that the Society has failed to hold the interest of the ophthalmologists, and Sir John Parsons, who incidentally is our oldest living Past - President, has more than once urged the Society to give more attention to the visual aspects of lighting.

Dr. Ferguson has long been interested in lighting matters and his work on mine lighting and miners' nystagmus is well known. He has attended meetings of the International Commission on Illumination since before the war and is, to the best of our knowledge, the only ophthalmologist who takes an active part in the proceedings of that body. He serves on a number of sub-committees of the N.I.C. and on the Light and Vision Committee of the Medical Research Council. He is senior ophthalmic surgeon at the

Royal Infirmary, Sheffield, and Lecturer in Ophthalmology at Sheffield University. He has published numerous papers on ophthalmological subjects, including mine lighting and miners' nystagmus. Dr. Ferguson is well known amongst the I.E.S. Centres, where he has given many lectures. Recently he visited the United States to study the work being done there in the use of cortisone in connection with certain diseases of the eye.

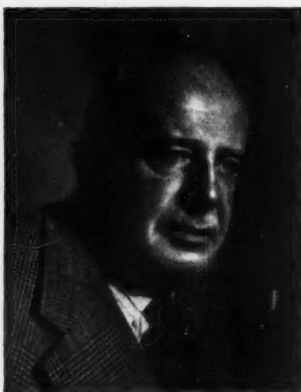
Our congratulations to Dr. Ferguson on his appointment as President and our best wishes to him for a successful year of office.

Dr. Ferguson will present his Presidential Address at the opening meeting of the Session at 6 p.m., on Tuesday, October 14, at the Royal Institution. We understand that the address will deal with the various approaches to lighting,

including ophthalmological, physiological and aesthetic considerations which tend to complicate the achievement of good lighting and seeing conditions.

Read Any Good Books Lately?

The conscientious lighting engineer must be wondering how to accommodate all the books which have accumulated on his desk and mantelpiece during the last few months, and the student who a few years ago had no textbook must now wonder where to start. The course for



Dr. W. J. Wellwood Ferguson

the intermediate certificate can hardly be described as difficult or involved and one good textbook, which we have, might be considered all that is necessary. However, the books now available approach the syllabus from slightly different angles and students can take the approach which suits them best. The problem in a few years may well be to ensure that there are sufficient students to want the books. The number taking the intermediate examination during the last three years has remained between 40 and 50, but it would seem that there has been some difficulty in getting courses arranged this year in some places owing to the lack of students. It can be appreciated that there may not be sufficient students to justify courses at colleges every year and we suggest that great efforts should be made to alternate courses for the intermediate and final examinations. Now that we have a textbook for the final we hope that the instructors, the shortage of whom is one of the great difficulties, will be forthcoming. Those far-sighted students who have overcome the difficulties and have successfully passed the final examination are to be congratulated.

As we go to press another book has been added to the pile on our desk, one on street lighting by J. M. Waldram. This is intended for borough engineers and surveyors; they will find it very useful. So will the student, though we doubt if he will be able to afford a copy of his own. We also will find it very useful in this office—we shall now be able to refer inquirers to one book instead of to dozens of papers published by different organizations.

Elaborate Lighting ?

In the correspondence column of this issue we publish a letter commenting on two lighting installations in the United States, which were reported in the September number. One of the installations, that in the office of a business executive who was enabled to alter the lighting to suit his taste, has come in for some criticism in the architectural press,

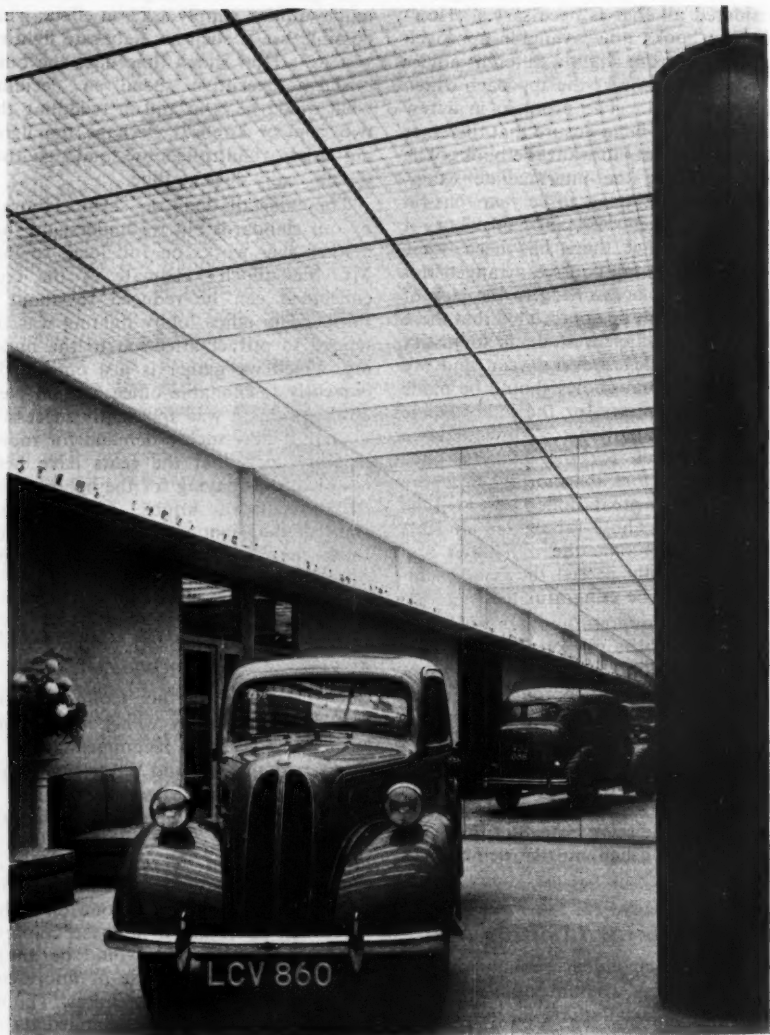
though not for the same reason as that of our correspondent. Our architectural colleague, whose writing and wisdom we much admire, simply asks, in effect, what possible use is such an elaborate lighting system? How much time does the busy business executive spend in deciding what mood he is in and in twiddling the two control knobs? Perhaps the lighting is also controlled by sound so that the air really does go blue.

These installations do seem elaborate by our standards but we understand that neither ever works on full load, so that Mr. McCulloch's estimate of the coal consumed can be reduced to about a third. The office lobby lighting was intended to attract attention to the building, which we gather is just outside the currently fashionable office area in New York; in this it was apparently successful—there is now such a demand for rooms in this block that the rents have been doubled, thus paying for the lighting, and the executive's knobs. If frills are wanted the lighting engineer can add them—he can just as easily leave them off.

Fuel Economy and Fluorescent Lamps

The report of the Committee on National Fuel Policy which has recently been issued contains recommendations of interest to the gas and electricity supply industries. Of greatest importance to lighting is the recommendation that the present 33½ per cent. purchase tax on fluorescent lamps be removed. The removal of this tax, which has been likened to the window tax of bygone days, has frequently been urged in these columns.

Removal of the tax would be an incentive to the greater use of fluorescent lighting in all kinds of premises. Though this may not result in any immediate reduction of the lighting load it will enable the trend for better lighting to continue without placing any additional burden on the electricity supply industry. It is to be hoped that this recommendation will be put into effect very soon.



*Effective application of a louverall ceiling
in a London car showroom.*

Cold Cathode Lighting in Shops and Stores

By G. O. SINGLETON*

The cold cathode lamp is one of the tools available to the architect and lighting engineer for creating atmosphere in shops and for displaying and selling goods. The article briefly describes the use of these lamps and describes one or two installations.

The primary object of a store is to sell goods to the public. These goods must be displayed in such a manner that the potential customer will be tempted to buy. The skill of the display artist is vital and lighting must be applied courageously yet economically to assist him in achieving results.

Before concentrating on the main subject of this article it must be clearly appreciated that cold cathode lighting can happily be combined with tungsten or hot cathode fluorescent. Cold cathode, while having proved itself advantageous in store lighting, is not the answer to every problem, and it is the lighting engineers' duty to select and combine the various sources most suited to any particular application.

The chief requirements of store lighting are:—

1. Adequate general lighting with a concentration in the selling areas.
2. The light source to be attractive, yet unobtrusive, glare-free and in keeping with the general decoration.
3. Colour and quality of the light must make the goods attractive and at the same time give a true representation of the appearance of goods under natural daylight conditions.
4. Ease of maintenance.
5. Operating cost must be kept to a minimum.

Apart from these considerations, an all-important factor is the initial cost of an in-

stallation which must be in proportion with the advantages offered.

These points can best be discussed by considering the various types of store concerned, which, for convenience, may be divided into the following categories:—

1. Multiple stores.
2. Large stores, having both general and specialised departments.
3. Smaller stores and shops which may be either general or specialised in character.

For the purpose of this discussion the second and third categories will be considered together.

Multiple Stores

For the large multiple store with a central organisation it is generally considered advisable to standardise the type of light source. The object is to achieve a design of lighting which will compare favourably with neighbouring shops. At the same time, the colour of light must be suitable for a wide variety of products, including fabrics, leather, food, fish and the like.

It is here that the cold cathode tube has much to offer. It has been found that an economical unit is one which produces an average of about 12,000 lumens throughout life. This output could be achieved by using four 5-ft. hot cathode fluorescent tubes, but the same result can be obtained by a single fitting incorporating about 44 ft. of cold cathode tubing in two sections. Two small transformers and one capacitor would be required per fitting, this keeping the number of components to a minimum and resulting in maximum maintenance efficiency.

The long life of tubing and gear results in considerable savings in labour costs, which are of major importance with the high wage rates at present ruling. The fact that an

*The General Electric Co. Ltd.

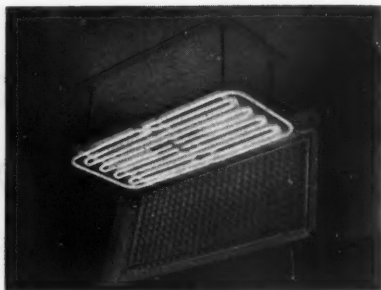
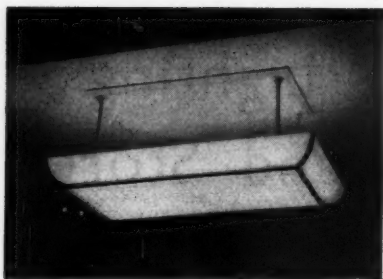


Fig. 1. Pleasing design, high efficiency and simple maintenance are the features of this fitting.

installation can be forgotten for a period of five years or more from the point of view of tube replacement is worthy of serious consideration in this type of store where maintenance work is normally carried on by an outside contractor. The only attention necessary is periodic cleaning of tubes and

fittings, as with any other form of artificial lighting.

The reliability of the tubes minimises the unpleasant effect of having a number of tubes or lamps out of operation in an installation at any one time. Experience during the past six years in a number of large stores

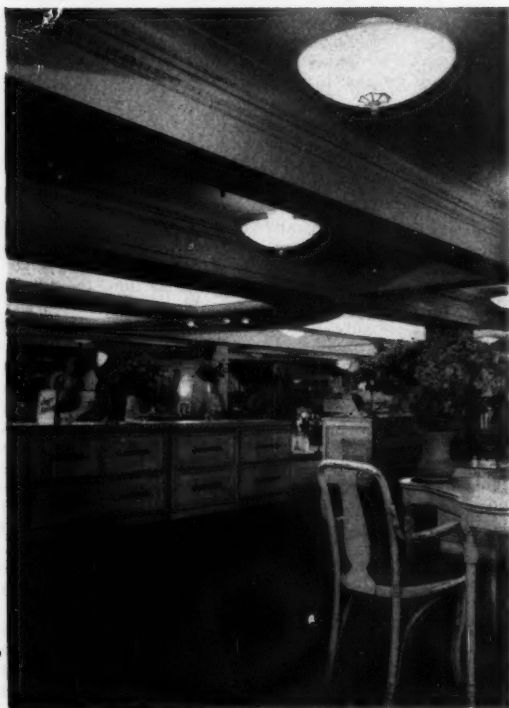


Fig. 2. A combination of cold cathode bowl fittings, indirect cove lighting and spotlights is very effective in this millinery department.

shows that the economies experienced after the installation of cold cathode tubing have more than justified the installation costs which are rather high compared with some other forms of lighting. It is generally claimed that the average life of cold cathode tubes is about three to four times that of hot cathode lamps with much the same lumen maintenance. Even longer lives have frequently been achieved, but it may not be economic to operate tubes beyond the normal declared life due to the gradual diminution in light output.

Once a store has adopted cold cathode tubes as the chief source of light it has on the whole been very satisfied and others have been quick to follow suit. The war retarded progress and the wide application of the cold cathode lamp must be considered as a post-war development.

It is impossible to forecast the lines upon which the lamp will be used in store lighting in the future as the ideas of management, designers and shopfitters vary. There can

be little doubt, however, that it will become more widely used.

Departmental Stores and Specialised Shops

An idea of the application of cold cathode lamps to departmental store lighting can be given by considering the problems presented and the solutions achieved in two representative London stores. In doing so, however, the wide variations in construction and layout of stores must be remembered; for instance, the lighting requirements for a large open selling area are very different from those of a store of cellular construction where departments have dividing walls.

Shortly after the end of the war the first of these two stores, which had a large floor area, decided that its lighting must be brought up to date. Fluorescent lighting was to be used, and it was considered that the cold cathode lamp offered many advantages. At this time self-contained cold cathode lighting units had not been introduced, and it was decided to produce

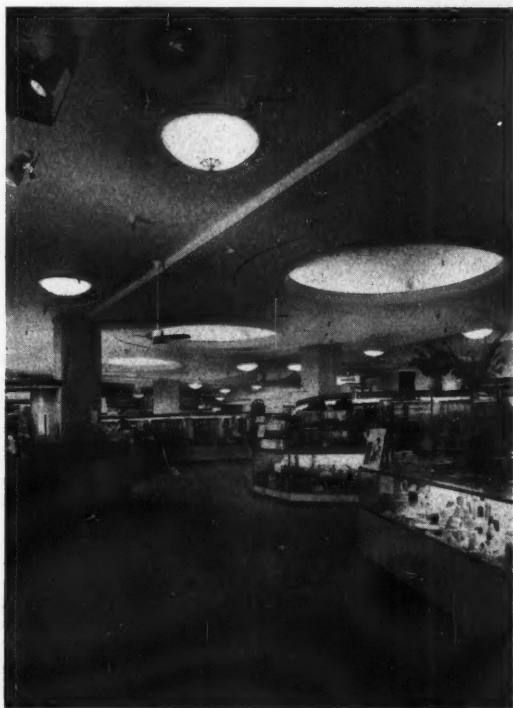


Fig. 3. Showcase canopy lighting provides the bulk of the lighting in this department. The bowl fittings, coves and spotlights add to the interest.

quickly a standard triple tube unit for trial. The fitting was simple in design, consisting of three straight tubes having an 8 ft. 6 in. lighting length with a box at either end to house transformers, capacitors and lamp electrodes. No attempt was made to screen the tubes.

Most of the requirements of this store, having large open selling areas, were met and the quality and colour of the light considered effective. The low brightness of the

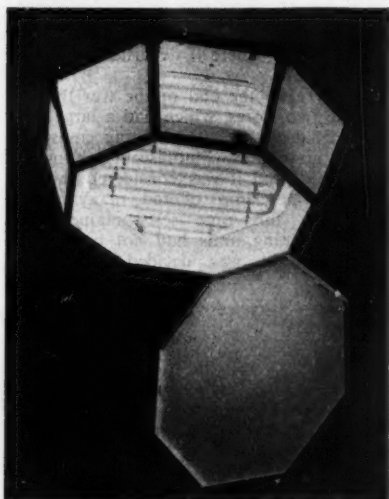


Fig. 4. Cold cathode fitting designed to give good illumination on vertical surfaces.

lamp permitted its use without fear of glare. Tests proved the lamp efficient and economical, and as a result a large number of fittings were installed which are giving satisfaction to-day after six years' service.

While it was found that for most departments the colour of one of the standard tubes, such as "warm white" or "intermediate," was adequate, in some departments such as carpets, furs and florists, many experiments were made and the colour of the "natural" and "colour matching" tube found very helpful.

The electrical advisers to this store have kept a complete history of the installation and have found that the economy of operating and maintaining the installation is well up to expectations and the average life of tubes in excess of maker's claims.

The second store is a complete contrast to the one described above and occupies a

corner site, resulting in odd angles and curves, with beams and coves and recesses across the ceilings and with a drop in the floor level between Regents-street and Piccadilly. Through the vision of the management and imagination of the display experts and lighting engineers, unique results have been achieved.

Four years ago it was decided to standardise a fitting throughout the store. Because of the varying shapes of the ceiling bays it was decided that the fittings should be circular, using fluorescent lamps to be in keeping with modern trends. At this time experiments were being carried out to develop a spiral tube which could be used in the laylight of the House of Commons and it was found that a similar tube met the requirements of this store. A shaped 030 "Perspex" bowl under the spiral resulted in a fitting of pleasing appearance.

Shortly after this it was decided to remodel the ground floor on ultra-modern lines. Display and sales counters of all shapes and sizes were introduced in such a way that the potential customer is unconsciously persuaded to follow through the whole of the display area (an important feature for a store situated in such a position to collect passing trade).

As an integral part of the scheme it was decided to light each showcase and counter independently by means of canopy lighting. The light was given free access in an upward direction to provide general illumination, while a small number of general lighting units were installed to supplement this. Cold cathode tubing was the natural answer to this problem. Its flexibility allowed it to be coiled into the many odd shapes required and its long life meant that replacement of special tubes would be infrequent.

Experience in the application of cold cathode lighting in stores, perhaps more than with any other light source, shows that every installation must be designed according to the circumstances and that rule of thumb methods cannot be applied.

The value of contrast and of light and shade must be appreciated and while the values given in the I.E.S. Code can be used as a very valuable guide, they must be balanced with experience. The store lighting engineer must have imagination and the courage of his convictions. A poorly executed installation producing 40 lm./ft.² will not be as effective as a cleverly devised scheme giving a considerably lower level of illumination.

One of the persons most interested in the

Continued on p. 359.

Neon Signs and Lighting for Shops

Considerable advances have been made in the last few years, yet it is still true to say that the majority of shopkeepers do not appear to fully value effective lighting. It is to these people, therefore, that this article is directed, although it is hoped that persons conversant with the subject will find something of interest.

There are many who consider electric lighting merely a necessity for seeing in the dark. On the other hand, there are those who feel that their shop should be a blaze of light, even to the point of blinding the people looking in the windows. To an extent it is gratifying to see that a number give some thought to their choice of fittings, but too infrequently does one see an installation which can be classed an *attraction*.

A probable explanation is that it does not seem to be generally understood that the lighting of *any* shop requires the advice of a specialist. The average electrical contractor

By S. E. QUITAK,*
A.M.Inst.B.E.

cannot normally submit suggestions exceeding the scope of a few catalogues. He is primarily a *wiring* contractor and bases his suggestions largely on catalogued information; this limitation might well account for the unsightly lighting seen in so many shops. Many shopkeepers feel reluctant to consider a "scheme" because the word suggests prohibitive costs. This is a train of thought which must be dispelled as it is just not true. One of the most important ways in which the lighting specialist can be of value is in knowing the most effective and economical way of applying the wide range of equipment at his disposal. A simple example would be where as many as five fluorescent lamps imaginatively installed can often be more striking, yet less expensive than a standard twin lamp decorative fitting. Similarly, one

* Director, Modern Electric (Installations), Ltd.
Associating Bond (Sheet Metal) Products, Ltd.



Fig. 1. A refrigerator showroom at Ilford, Essex.

or two well chosen spotlights under other situations might well produce better results than the five fluorescent lamps.

Principles

The basic principles in the consideration of a lighting scheme have much in common with planned shopfitting. In most types of retail business the primary object is to draw attention to the shop itself, thence to the windows and discreetly through the door to the interior. Naturally, the merchandise must play its part, and if it can overtake this procedure, all the better.

Initially, there are few better means of attracting the passer-by to "our side of the road" than with an attractive neon sign. This need not necessarily be elaborate in design, but if possible a little more ambitious than standard block letters superimposed with clear red neon tubing. Here again, to create good effect, ideas need not involve high cost. Invariably a well-designed simple layout is more likely to be noticed and read than a mass of wording or tubing. Colour can be of particular value and the variety of tubes in this respect is not generally known. It is quite easy to distinguish an otherwise plain sign by the use of such colours.

As regards the window and interior lighting, it is not desirable to suggest a standard approach beyond the principles outlined, and perhaps a few installations which the author's Company have recently undertaken will serve to illustrate such applications.

Examples

Fig. 1 is a photograph of a refrigerator showroom in Ilford, Essex. The fascia background has alternate white and light blue vertical stripes, the "Frigidaire" trade mark being in built-up metal lettering, stove enamelled "french blue" and fitted with semi-recessed blue cold cathode tubing. "MARKETING and MAINTENANCE, Ltd.," is in metal lettering mounted on the front edge of a recess, the bottom of which has eggcrate louvres. The concealed 5-ft. fluorescent lamps silhouette the firm's name and throw light through the egg-crating to the frontage. The contrast in the two signs produces equal prominence to the name and the type of business with good effect. The only obvious source of light on the interior is the continuous white cold cathode tube fitted to the edge of the shaped false ceiling. The general illumination is augmented by concealed fluorescent lamps in many suitable places. The installation has not only the tendency to draw, but also to maintain a person's interest right to the back of the showroom. With such large merchandise this is of importance as there can only be a limited display by the window.

Fig. 2 illustrates a gown shop in the Market Place, Lansbury, a new estate under the recent Town and Country Planning developments where there are a large number of new shopfronts to compete with. In spite of being at the end of the parade, it is fair to assume that few people would buy a dress in the neighbourhood without

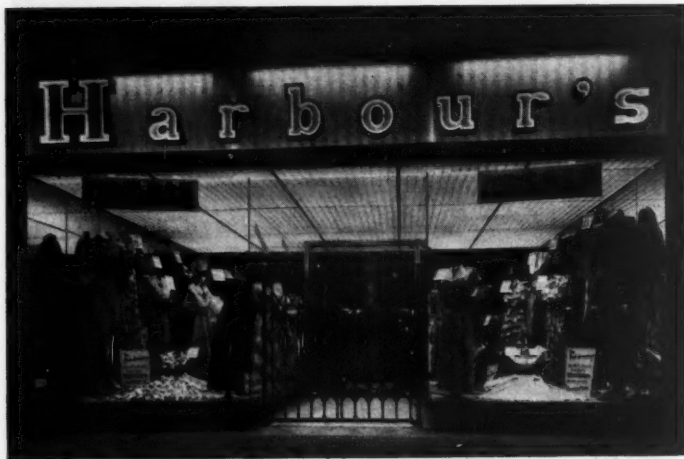


Fig. 2. A gown shop on the new estate at Lansbury.

Fig. 3. A china shop in Oxford Street, London.



first looking in this shop. The fascia is sandblasted plate glass with alternate vertical strips satin finished. This is illuminated by concealed fluorescent lamps producing an attractive light blue background. The bold metal letters have deep recessed faces enamelled red and incorporate double outline cold cathode pink tubing. The white returns receive light from the background and the wide front edges are silhouetted. The soffit over the windows and arcade is of uninterrupted egg-crating. Even the plate glass windows and armour plate doors are actually inset into slots in the louvres and are not supported by any visible means. This egg-crating is covered by trough fluorescent fittings and spotlights. The interior lighting is on a similar principle inasmuch as the general lighting is by large sections of egg-crating recessed in the false ceiling, the "warmth" being provided by flush port-hole fittings. These are backed up by architectural striplights over the many mirrors and results in the customer viewing the garment in a combination of lighting which is flattering.

Fig. 3 shows the Oxford Street view of a large china shop near Marble Arch. The fascias comprise light blue metal panels with the name in metal letters fitted with blue cold cathode tubing. The main fascia is of particular interest due to its being curved, a job normally averted but resulting in this instance in a most imposing corner. The interior lighting is a considerable attraction and it is worth noting that here again the whole display is visible from the outside. There are a number of exquisite glass chandeliers which, assisted by less conspicuous fluorescent lamps and much reflected light, provide the general illumination. The merchandise is mostly displayed

in recessed showcases and counters which are all locally lighted by concealed and semi-concealed fluorescent lamps. The window displays are also adequately dealt with from top and bottom, the continuous reflector along the floor having the interesting feature of incorporating the name "Chinacraft" in discreetly illuminated inset panels in the centre of each section of the windows.

Conclusion

In these examples, each shop succeeds in unpretentiously dominating the vicinity largely due to the signs and lighting. This could not be achieved by other means without considerably higher expenditure, yet it cannot be said that in any one instance are the methods elaborate. Quite the contrary, the effects are without question realised with economical simplicity.

It is not possible to elucidate the innumerable ways in which to accomplish such results under other circumstances, and in any case as stated, there are no set rules. No endeavour is made in this limited space to outline the vast amount of fittings, spotlights, coloured lamps, etc., that can all be used to excellent purpose under the right situations. It is appreciated that many shopkeepers believe that their type of business does not necessitate or lend itself to ideas in lighting. They feel that there is not sufficient scope to consult a specialist but it is just as important to have ideas in the smallest shop as in those described. Even if the specialist's thoughts have to be confined to competing with a few plain battens on a window soffit or interior ceiling, the effects can invariably be bettered with no additional outlay. Lighting can often be the cheapest, quickest and best way of putting a shop on the map.

Men's Wear Stores— Brighton and Cheltenham



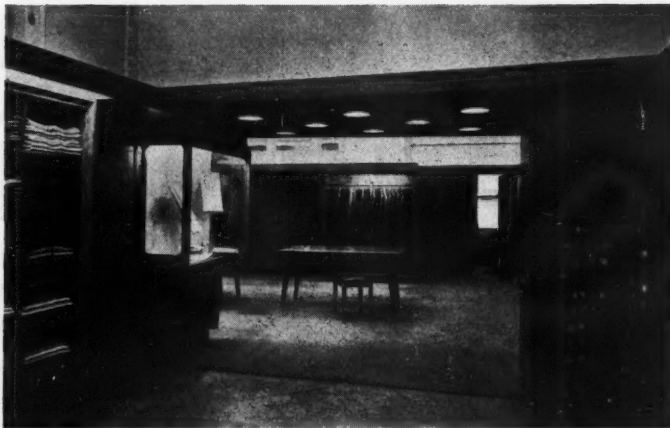
*Second floor of
the Cheltenham
shop.*

Lighting of the new Austin Reed stores in Brighton and Cheltenham has been designed as part of the architectural features. In both shops "Natural" fluorescent lamps



*Entrance to
the shop at
Brighton.*

*Cornice
lighting at
Brighton.*



and tungsten lamps have been used to obtain the desired result, bearing in mind the colour rendering of the goods sold, as economically as possible. Suspended ceiling fittings are made up of double rows of 4 ft. 40-watt lamps louvred on the underside but open at the top to take full advantage of reflection from the ceiling. Tungsten lamps (60 watt) are fitted in pairs over concentric ring louvres between each pair of fluorescent lamps. Fittings using this combination are made up in suitable lengths for the various positions in the shops.

The majority of departments have quick-service fixtures which are lighted by continuous troughs holding the same fluorescent-tungsten mixture fitted into the top of the cornice to give unobscured light on to the merchandise. These fittings are also louvred and open at the top to add to the general lighting of the shop.

There are no lighting fittings inside the fittings rooms at the Brighton shop, which are illuminated through a reeded glass ceiling with the same combination of fluorescent and tungsten lamps as used in other parts of the shop and giving an even illumination for fitting purposes.

The clothing departments at the rear of the Brighton shop and on the second floor at Cheltenham each have two 24-ft. fittings as described above with fluorescent-tungsten fittings in each clothing cabinet. Westwood, Sons and Harrison were the architects and the fittings were made by Venreco, Ltd., and installed by the engineering staff of Austin Reed, Ltd.

*Showing combined
tungsten and fluores-
cent fittings.*



Store at Stockton

The redesigned first floor of M. Robinson and Sons, Ltd., Stockton-on-Tees, incorporates display platforms, lit by "Natural" colour fluorescent lamps in



troughs, which allow unlimited scope for the display of garments of every description. Fluorescent lamps are also used to light the glazed display panels built into the walls and island fixtures and some of the display plinths.

The general illumination, which is provided indirectly by the upward light from the troughs and canopies, and also partly from the existing cold cathode lamps mounted on the ceiling, is subdued to contrast with the high level display lighting.

The refitting and lighting described were carried out by E. Pollard and Co.

The basement at Longley's; soft furnishings and linen departments.



Store at Bexhill

Longley's, of Bexhill, have recently adopted fluorescent lighting in several of their departments on the ground floor and in the basement. On the ground floor "Atlas" twin 5 ft. 80-watt suspended fittings with quick-start control gear have been installed, and in the basement, where the headroom is limited, ceiling-mounted fittings each containing one 5 ft. 80-watt lamp controlled by quick-start gear are used. In all fittings warm white lamps are used.

It would seem that fluorescent lighting is particularly advantageous in the basement partly because of the low ceiling but also because under normal circumstances the lighting is in use for a minimum of 55 hours every week, making fluorescent lighting more economical.

The improvement in the general atmosphere of the shop and on the appearance of the goods on display has been most noticeable. The electrical contractors were Elmsworth Turner and Co., Ltd., of Bexhill, and the lamps and fittings were supplied by Thorn Electrical Industries, Ltd.

Cosmetics counter on the ground floor.



Dolcis Shoe Shops



Bond Street shop. View of salon on entering through connecting link from front shop.

Dolcis shoe shops have several times been featured in these pages for the imaginative use of lighting by the architect of these shops, Mr. Ellis E. Somake. The two shops shown here are those in Old Bond Street and at Portsmouth. The Bond Street shop is in two parts, a front display area and a rear sales area, the two being connected by a passage. Illuminated display frames on the wall of the front shop are continued through the passage to link up with the sales area.

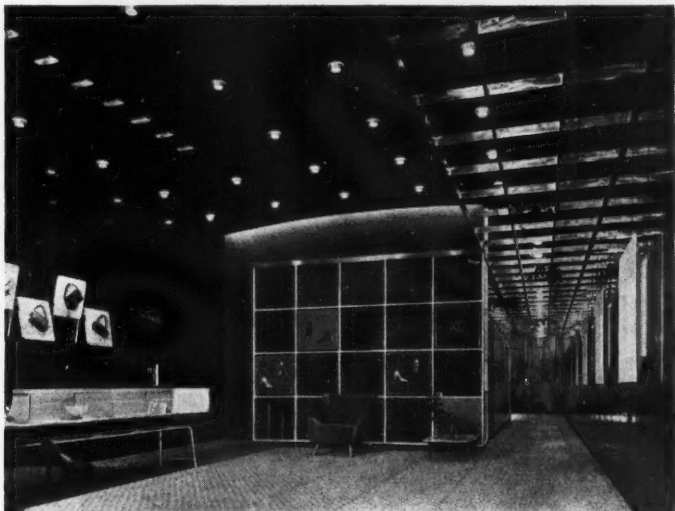
Specially designed tungsten lighting fittings were used, the two areas using slightly different types. One wall in the rear salon is hung with curtains which are reflected in the mirror wall facing. The third wall is a display screen, each display panel being lit from above by "diabolo" fittings finished in satin brass. The ceiling of the rear salon

is suspended, and concealed cold cathode tubes round the edge provide subdued lighting on the walls without detracting from the displays.

The view of part of the front shop showing the passage through to the rear area also shows the position in the ceiling of the 24-volt 60-watt spotlights which give a small, concentrated beam to light the display on the left-hand wall. The same openings also accommodate 100-watt lamps with clip-on louvers to continue the pattern of the other ceiling fittings, giving direct lighting in the shop. This picture and the other of the front of the shop show how well the connection through to the sales area, which is not visible from the front, has been made.

The recently opened Dolcis shop in Portsmouth makes use of this firm's skillfully

Front shop, showing on right connection through to sales salon.



lighted deep front entrance to attract customers into the shop, the window lighting being by means of semi-recessed tungsten fittings. The fitting is similar to that used on the first floor, which is illustrated. Fluores-

cent lamps are used in the wall showcases on this floor. Similar fittings are also used on the first-floor landing, where skilful use is also made of tungsten fittings over the handbag display. Fluorescent lamps con-



Front of shop from Bond Street.



First floor of the shop at Portsmouth.

First floor landing at Portsmouth shop.

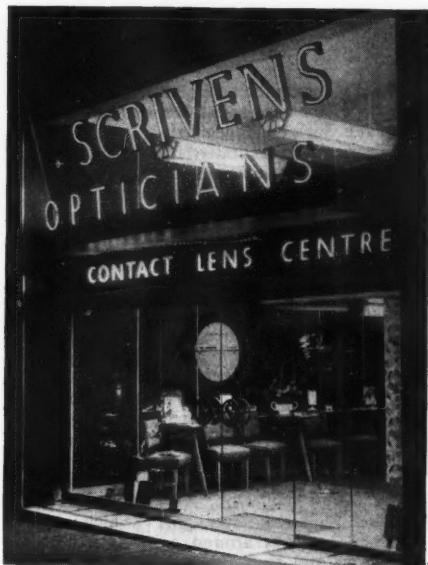
cealed under the slight projection of the platform seen on the right of the picture are used to light the display of sandals on sand, and fluorescent lamps are also used to light the mural.



The lighting contractors were Courtney, Pope (Electrical), Ltd., who also manufactured the fittings.

An Optician's

Scrivens's optician's shop in Regent Street, London, is an open-fronted shop which makes the fullest use of good lighting to attract attention to itself. The immediate interior is lighted by means of 5-ft. lamps concealed behind two flush louvres. The lighting of the main body of the shop is provided by three decorative louvred fittings each containing four 5-ft. lamps and suspended from the ceiling at a height of 12 ft. Two-lamp decorative fittings are used in the rear part of the shop. The shop fitting work was carried out by G. W. Stokes and Son, Ltd., of Birmingham.



A Showroom

Indirect fluorescent lighting from fittings mounted in specially designed fibrous-plaster cornices, together with recessed reflector spot-lamps, provides effective display lighting at the Bradford showrooms of J. Crawthra and Co., Ltd., textile manufacturers. High-level illumination on the display

counters is provided by directional spot-lamps. Fluorescent lighting, together with a background illuminated by concealed coloured lamps, provides bright and attractive showcase lighting. Engineers of the B.T.H. Co., planned the installation, which was carried out by Inman-Joist, Ltd.



When planning the fashion floor of Lewis's, Liverpool, the architects, Bronek Katz and Reginald Vaughan, decided to make the ceiling the main decorative feature. This was accomplished by using pre-fabricated plaster in the form of a large canopy in the centre, having a cornice around its outer edge and five cruciform features in the centre. On either side of the canopy and at right-angles to it five U-shaped cornices follow the ceiling beams.

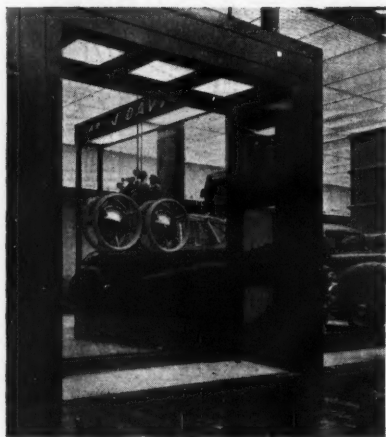
There are four more cornices, one in front of the lifts and the others near the windows; all have been fitted with a triple line of intermediate white, warm white and gold cold cathode tubing, 1,661 ft. of each colour being used. The average illumination is approx. 15 lm./ft.². The gold line is independently switched so that three different colour effects are available. This lighting is supplemented by 150-watt reflector lamps housed in recessed louvred spotlights which are arranged in fours around each of the five stanchions and give emphasis to special displays. This installation was designed by The G.E.C., Ltd., in conjunction with the architects and Lewis's Chief Engineer, Mr. O. C. Waygood.

Lewis's, Liverpool



*Interior of
Lewis's,
showing ex-
tensive cor-
nice lighting.*

A Car Showroom



General lighting at the premises of J. Davy, the car hire firm at High-street, Kensington, is provided through a louvre-all ceiling of white stove enamelled metal louvres concealing 110 4-ft. fluorescent batten fittings. The appearance through the wide glass doors forming the frontage is very striking. The soffit immediately behind the doors is fitted with 11 adjustable 150-watt spotlight fittings, and the cove on the rear wall facing the front is illuminated by concealed warm white lamps.

The entrance (shown in the smaller photograph) has three illuminated soffit panels and three lighted showcase windows on each side of the entrance. In the showcase on the right as one enters the showroom direct lighting is given by fluorescent lamps behind louvres, the lamps also providing edge-lighting for the "Perspex" letters of the sign let into the cornice. Cold cathode tubes in the cornice behind the name sign on the front help to light up the fascia and to accent the name by silhouette.

The architect was Michael Egan, and the shopfitting work was carried out by Hickman, Ltd.

Exterior of Davy's, showing louverall ceiling.



NEW LIGHT ON OLD SAYINGS:



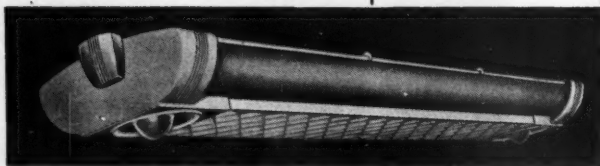
OUT OF SIGHT-OUT OF MIND

WHO'S going to be tempted into 'spur-of-the moment' purchases if the goods are handicapped by being badly lit? Really effective lighting can make a big difference to a shop's prestige and profits — as Philips have been proving for the last sixty years. For Philips have unsurpassed experience in every type of specialised lighting. That experience is always at your service. Call in a Philips engineer for a consultation about your lighting ideas — there's no charge.

The Philips "Alva" fitting, illustrated, uses two Philips Instant-Self-Start Fluorescent Lamps and two Philips Tungsten Ballast Lamps. Other suitable fittings are "Arundel" or "Abingdon".



Consult



PHILIPS ELECTRICAL LIMITED
on all lighting problems

LIGHT GROUP • CENTURY HOUSE • SHAFESBURY AVENUE • LONDON • W.C.2
Lamps & Lighting Equipment, Radio & Television Receivers, "Philishave" Electric Dry Shavers, etc. (LD211)

*Old Bond Street,
London.*

Recent Street Lighting Installations



London

Six years ago, in the autumn of 1946, the B.T.H. Co., Ltd., introduced a new kind of street lighting to the world by way of an experimental installation in a 200-yard section of Old Bond Street. Now this installation, which resulted in similar erections all over the world, has been taken down and a permanent installation fitted in its place.

In planning the new installation, consideration had to be taken of cost and special brackets were therefore manufactured to clip on existing poles.

Each of the new B.T.H. fittings has three lamps, totalling 300 watts, two of which may be switched off when necessary, leaving one 100-watt lamp to provide reasonable late-night illumination.

Surrey

A new installation of street lighting was completed in June for the Sutton Borough Council. The scheme covers approximately four miles of roadway and is divided into two sections. The first includes the Carshalton and Cheam Roads starting at the boundary of Carshalton and proceeding to the Epsom and Ewell boundary. The second section includes the London Road, Stonecot Hill and Epsom Road between the boundaries of Merton and Morden and Epsom and Ewell.

The installation was planned by the Borough Engineers and the Surveyors' Department of the Sutton Borough Council, whilst the equipment was supplied and

erected by the General Electric Co., Ltd.

The lanterns employed are of the side entry type, are totally enclosed and use a horizontally burning 140-watt sodium lamp enclosed in a "Perspex" dish to which are bonded "Perspex" refractor plates. The lanterns are mounted at 25 ft. on Stanton narrow-base concrete columns which have an especially pleasing design. The average spacing throughout the installation is 120 ft.



(Above) Night view of a stretch of the London Road, North Cheam.



(Left) A difficult corner well illuminated for safety on the Ewell Road, Cheam.



Sodium lighting on a trial section of a Bracknell road.

Bracknell

Recently a trial section of Class "A" sodium lighting has been brought into service in the new town of Bracknell. The installation, which was planned by the Chief Engineer of the Bracknell Development Corporation, uses Stewarts and Lloyds columns and the new Siemens sealed drum refractor lanterns with 140-watt sodium lamps.

A novel feature of the lantern is that the vacuum jacket of the sodium lamp is sealed to the drum refractor assembly by means of a heat-resisting rubber gasket in such a way that the assembly is dust and watertight. The removal of the conical end cap gives access to the lamp which may be changed without breaking any seals, thus reducing the maintenance to a minimum. Normally the only cleaning required is that of the exterior of the drum refractor and this can conveniently be done whenever a lamp is changed. In practice owing to its shape very little dirt accumulates on the glassware and rain has a marked cleaning effect.

Leeds

Dewsbury-road, Leeds, is a busy outlet from Leeds carrying a considerable amount of traffic. The road is 60 feet wide from kerb to kerb at the location of the new street lighting installation. Sixty-five Metrovick "SO Fifty" lanterns with 140-watt

sodium lamps are mounted on the existing tram columns. The illustration shows part of the installation where the lanterns are at 110 ft. spacing with a centrally suspended lantern at every third span.



Dewsbury Road, Leeds

The S.B.A.C. Flying Display and Exhibition—1952

The Society of British Aircraft Constructors, representing the British aircraft industry, held its 1952 Flying Display and Exhibition at Farnborough, Hampshire, last month. Of the great number of different types of aircraft which took part in the flying display, two-thirds were powered by gas turbines. Many were being seen on display for the first time, including the spectacular Avro 698, the world's first operational four-jet Delta bomber.

There were two sections to the exhibition, one being an outside display of aircraft, the other an indoor exhibition of engines, parts, accessories and materials. In this latter section a number of firms exhibited lighting equipment.

The B.T.H. Company's main exhibits consisted of electrical equipment, including navigation, identification, taxiing, warning, cockpit, landing and general service lamps.

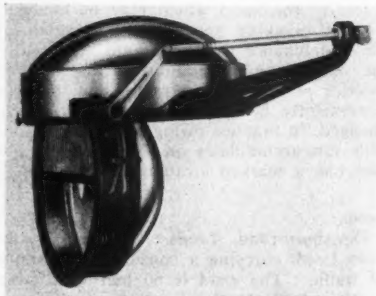
Among the latest developments in safety glass and thermoplastic windscreens, the Triplex Safety Glass Co. Ltd. showed a new product known as laminated "Perspex." Used at present for windscreens and cabin windows this material may well be adapted later on for use in lighting equipment. Various plastic materials were also shown by I.C.I. Ltd.

The exhibits of the G.E.C. Ltd. included new airborne and ground electrical equipment. Amongst the lighting exhibits shown was a lightweight (approximately 5½ lb.) high intensity approach light, designed to fulfil the requirements of a modern approach light system with the minimum possible obstruction. The fitting consists essentially of two parts, the reflector/spreader glass (which also forms part of the housing) and the gallery carrying the lampholder and cable entry. The reflector is spun of heavy gauge, super purity aluminium, electrically brightened and anodised. The spreader front glass is of the dished type, pressed from heat-resisting glass, and is spun into a recess formed in the mouth of the reflector, thus making a permanent

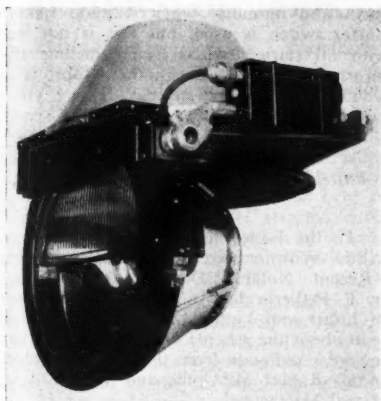
weatherproof joint independent of perishable gaskets.

The gallery is a light but rigid spinning and contains the special prefocus lampholder, which is of skeleton type to assist heat dissipation, and is moulded of heat-resisting grade Bakelite. A compression gland cable entry is provided. The gallery is located in the neck of the reflector by means of a spigot-type joint, and is held in firm contact with an accurately formed bead on the reflector by a single stout spring, thus ensuring correct focusing of the lamp in the reflector. No adjustments are required and none is provided. The fitting is mounted on a knuckle-joint, attached to a cast light alloy ring spun into, and reinforcing, the neck of the reflector. The knuckle joint incorporates a slotted quadrant which permits adjustment of the beam in the vertical plane between 0 deg. and 17 deg. above horizontal. The base of the knuckle joint is in the form of a socket screwed for 1½-in. conduit and incorporating a simple cable clamp. All aluminium parts are protected with chromate undercoat, and the exterior finish is yellow paint.

Also on view was a lightweight (weighing 2 lb.), high intensity runway light, designed for use with lamps of up to 100 watts. The



Used for helicopters, the Harley 8KD, a manually retractable landing lamp.



Harley electrically retractable landing lamp.

uni-directional light distribution allows great flexibility in installation—with this fitting it is not necessary to provide bi-directional high intensity lighting on runways on which instrument landing facilities are only available in one direction.

The fitting has been designed for the minimum weight consistent with robust construction. It consists essentially of an anodised high purity aluminium reflector (which also forms part of the housing), a small cast body and a heat resisting pressed spreader glass. The glass is lapped into the rim of the reflector, making a permanent weatherproof joint without the need for any perishable gasket, the two units being replaced as one if necessary. The Bosch type lampholder is mounted in a cast gallery of weather-resisting silicon aluminium alloy, which incorporates a ball type mounting on a tubular stem, giving adjustment through 360 deg. in azimuth and from 0-10 deg. in elevation above the horizontal. The reflector is fitted on a spigot type mounting on the gallery and securely held in position, and in correct register, by two toggle clips, correct alignment of the spreader glass being ensured by the incorporation of a locating lug in the spigot mounting.

The stem of the fitting is provided with a shear-notch just above ground level, and is externally threaded 1-in. E.T. and provided with two locknuts for attachment to a ground mounting plate (not provided with the fitting). The connecting cables are taken through the stem, a moulded rubber wedge

type grummet at the point of entry into the gallery ensuring that tension on the cable is not transmitted to the lamp-holder terminals. The design and construction greatly facilitate the dissipation of heat, with beneficial effect on the life and efficiency maintenance of the lamp. All aluminium parts are protected with chromate undercoat, and the exterior finish is yellow paint.

Another interesting stand was that of Harley Aircraft Landing Lamps, who were showing aircraft landing lamps, taxiing and manoeuvring lamps for aeroplanes, flying boats and surface craft and mobile searchlights. Illustrated are the Model 11K, an electrically retractable landing lamp, and Model 8KD, an eight-inch manually retractable landing lamp. The first of these is used for de Havilland Comets, Bristol Britannias, and the Brabazon. It has a 26-volt or 750/240-watt lamp. The other is for helicopters, and houses a 250-watt double filament lamp.

Other firms exhibiting included the Schermurly Pistol Rocket Apparatus Ltd., who were showing runway illumination equipment, Standard Telephones and Cables, Ltd., Rotax Ltd., and Venner Ltd.

Cold Cathode Lighting in Shops and Stores

Continued from p. 340.

type of lighting in any store is the maintenance engineer. To him falls the job of organising the replacement of tubes and lamps, of keeping the fittings and lamps clean and of accounting to the management for the electricity bill. Reports from engineers indicate that generally cold cathode fittings have given reliable service.

Although cold cathode lighting is still in its infancy, much good work has already been done and it is old enough to have proved its worth.

Fluorescent Lamp Development

It has been pointed out that the note on this subject, appearing on p. 268 of the August issue, might be misleading in crediting to Dr. Dresler statements which he did not, in fact, make in his lecture to which we referred. The remarks made by Dr. Dresler were summarised in the first part of the first paragraph. The last sentence and remainder of the notes were contributed by us, and were intended only to enlarge on the points made by Dr. Dresler. We would apologise to Dr. Dresler for any misleading impression which might have been given.

Correspondence

Testing of Fittings

To the Editor, *LIGHT AND LIGHTING*.

Sir,—We should like to reply to the points raised in Mr. Hill's letter published in the July issue.

In connection with his remarks on the 1 kv proof test we would refer to B.S. 816-1938 for Electrical Appliances and Accessories in which this test is specified for devices for connection to circuits up to and including 250 v. Manufacturers may, and generally do, use higher voltages, and, in the laboratory, such tests are usually conducted in conjunction with a device which detects any ionisation which may occur within the insulation. But repeated application of unnecessarily high voltages to Class A insulation will, in our opinion, bring about the fatigue mentioned by Mr. Hill. We agree that an insulation resistance test by itself can be misleading. Conversely, it is possible for a piece of apparatus to withstand a high voltage flash test and yet have a very poor insulation resistance. Table 5 specifies both tests.

Regarding capacitors, we have included only such tests as we consider should be made by the purchaser or user, because the control gear manufacturer always obtains his capacitors either from specialist manufacturers or from an entirely separate part of his organisation. Capacitor design is outside the scope of our paper.

Mr. Hill's last paragraph illustrates the difficulties which may arise from the presentation of data in condensed or tabular form. With sufficient space available the simple "Yes" or "No" in the table could have been amplified in the text. The "Yes" opposite "Ballast" (not ballast design) and "Colour" was in answer to the question, "Can an alteration to the ballast alter the colour of the lamp?" The ballast controls the current through the lamp and hence its colour. That the change is significant can be shown in any lead-lag fitting on reduced voltage, or by a comparison of 4-ft. 40-w. and 80-w. lamps made with the same phosphor.

The final sentence in Mr. Hill's letter is quite correct, but he has chosen only one of many possible combinations of "external variable factors" which result in a different answer from that given. To have included all the possible combinations would have resulted in an unwieldy table. For example, striking volts are unaffected by adjacent

earth and humidity when a good quality starter switch is used, but this is not true with all starter switches. To include this information at least another four rows would be required in the table.—Yours faithfully,

G. FAHEY,
D. T. WAIGH,
W. R. BLOXSIDGE.

Enfield.

"Brise Soleil"

To the Editor, *LIGHT AND LIGHTING*.

Sir,—With reference to the article "Recent Notable Daylight Installations," by P. Petherbridge, in the June, 1952, issue of *LIGHT AND LIGHTING*, I was interested to read about the scheme employed for excluding solar radiation from the new office block of Sir Robert McAlpine and Sons, Ltd., at Hemel Hempstead.

I work in a wide H-type five-storey office block where, as at Hemel Hempstead, the majority of windows face east and west, the glass area in this case forming 20 per cent. of the floor area. Experience has shown that protection from exposure to direct sunlight is necessary during the three summer months between 9 a.m. and 11 a.m. on the east side, and from 3 p.m. to 5 p.m. on the west side, i.e., when the sun's altitude lies between the horizon and 45 degrees. During this period protection is obtained by means of adjustable light-coloured curtaining which can also provide a good reflectance during the winter months when artificial lighting is resorted to.

In a country where sunshine is the exception rather than the rule, where protection from direct sunlight penetration is more generally required at altitudes below 45 degrees, and where the hours of lunch are generally staggered between 12 noon and 2 p.m., it may be a matter of conjecture whether the additional expenditure obviously incurred on the Hemel Hempstead project is really justified.—Yours, etc.,

Bournemouth.

H. M. BEAVEN.

Lighting Loads

To the Editor, *LIGHT AND LIGHTING*.

Sir,—On reading page 326 of the September issue, I was appalled at the loading of the installations discussed by Mr. R. Gillespie Williams in relation to their value to the community. Allowing for a 5 per cent. annual load factor it appears that the lighting of the lobby of a well-known office building in New York will consume 45 tons of coal per year and that the lighting of the office of a business

Continued on p. 362.

REVIEWS OF BOOKS

"Worked Examples in Illuminating Engineering," by R. W. Ames and J. B. Harris. Macdonald and Co., Ltd., London. pp. 238, 134 figs. Price 21s.

This book will be welcomed by those concerned with courses in Illuminating Engineering, who are not themselves closely in touch with this relatively new field of Technology. The examples selected cover most of the normal examination syllabuses, and the answers are in the main concise and well illustrated.

In attempting to give model answers to so wide a range of problems, the authors have undertaken a bold task. The answers given here naturally represent the personal interpretation of the authors, and this fact should be made quite clear. Occasionally the real purport of a question appears to have been missed, and sometimes the reasoning is not clear, or a statement requires amplification. Indeed, a major fault may be that the answers do not explain sufficiently the reasons for the solutions offered, which are often more important than the actual details of the solution.

Errors and lack of clarity are especially to be avoided in instructional books; unfortunately there are several faults which may trouble or misguide the student. To name a few, the figure of 50 per cent. in Answer No. 7 should be more like 2 per cent. The difference between colour of a light source and its colour rendering properties is not brought out in No. 101. The mathematical theory of the integrating sphere given in No. 115 is confused; and the expression defined as the Zone Factor on page 124 is wrong, as the Zone Factor includes the factor 2π . It is a pity, too, that the old term "*foot candle*" is used almost throughout instead of the recommended "*lumen/sq. ft.*"

A more fundamental fault is the misinterpretation in examples 27 and 28 of the eye sensitivity (visibility) curve as giving the relative apparent brightnesses of colours for equal energy. The final statement in the answer to Problem 27 is quite wrong. The peculiar interpretation of a "physical photometer" as meaning a visual instrument in Nos. 38, 39 and 41 is unfortunate, as this term is normally applied to non-visual instruments, and a candidate who describes a visual instrument when a physical type is asked for can expect to receive scant sympathy from the examiner!

(The question No. 38 appears to have been misquoted.)

The written "question and answer" method of learning is very useful in encouraging orderly thinking and presentation, but it is not a good method for understanding a subject. If, however, the limitations of the method are borne in mind, and a wary eye kept open for errors, the book should prove a useful guide in the rather limited field which it would appear to serve.

S. S. B.

"Colour in Theory and Practice." H. D. Murray, editor. Pp. 360 + xiii. Numerous figs. Chapman and Hall, London. Price 70s. net.

The fact that the first edition of this book was written by two authors whereas this, the second edition, is the work of no fewer than eight, each an acknowledged expert in his own field, illustrates very forcibly the great developments that have taken place in the subject of colour during the intervening period of 13 years. There are now 22 chapters, most of them grouped under three main headings. The first group deals with the physical and chemical aspects of the subjects and includes chapters on light and radiation considered as physical phenomena, the photo-electric effect and the various parts of the subject which are of interest primarily to the chemist. The second section, dealing with the physiological and psychophysical side, includes chapters on vision and colour vision, one on defective colour vision and others on the visual basis of colorimetry. It is in the third section that we find the chapters which are of most direct interest to the lighting specialist, viz., those dealing with light sources, spectrophotometry and colorimeters, both visual and photo-electric. The appendices, which occupy no fewer than 41 pages, include a number of tables required for colorimetric computation and extensive extracts from the Report on Colour Terminology of the Physical Society Colour Group.

The price of the book appears high, but it must be admitted that the printing and paper, the diagrams and binding are all of a much higher standard than that to which we are accustomed to-day. The index is adequate but has one irritating feature: although the book is paged continuously, the references in the index are to sections of chapters and not to pages.

In addition to the many line diagrams and half-tones in monochrome, there are a number of colour plates and in fact it would not be exaggerating to describe the book as

"sumptuous." It can be strongly recommended to everyone who is interested in the subject of colour, no matter what his particular line of approach may be.

"Colour in Business, Science and Industry," by D. B. Judd. Pp. 401, figs. 106. Chapman and Hall. Price 52s.

For the purpose for which it was written this book could hardly be bettered. The purpose is, in general terms, to present the science of colour and colorimetry to those for whom colour is of direct practical and commercial interest. The author has, as he states in his preface, come into contact with hundreds of "colorimetric sore spots" in industrial life. No one, therefore, is better fitted to write a book of this kind, and in fact Dr. Judd has performed the task which he set himself with conspicuous success.

A very simple example will show the ingenuity with which he explains to the layman a mystery like that of a colour mixture with a negative component. He uses as an analogy the specification of mixtures of alcohol and water in terms of the proportions of a mixture in which the basic components are water and proof spirit (50 per cent. alcohol, 50 per cent. water). Clearly a mixture containing more than 50 per cent. of alcohol can only be so specified if one component, the water, is present in the "matching mixture" in a negative amount.

The book is not divided into chapters but consists of three parts. The first serves to provide a background and deals with vision generally and with colour vision in particular. The second part contains most of the strong meat and, in fact, occupies rather more than half the total space. Entitled "Tools and Technics," it deals with colorimetry proper, both theoretical and practical, colour systems depending on arrays of samples, colour tolerances and colour terms. The third section, which is comparatively short, deals with the physics and psychophysics of paints, varnishes and the like. There are a number of useful tables, a lengthy bibliography (which is refreshingly international) and a fair index.

J. W. T. W.

Correspondence

Continued from p. 360.

executive will consume some 6½ tons of coal per year.

Is this not an unwarranted wastage of a country's natural resources?—Yours, etc.,
Newcastle-on-Tyne. J. S. McCulloch.

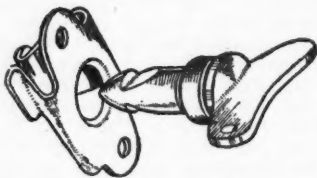
I.E.S. of Germany

An invitation to members of the I.E.S. of this country to attend a two-day meeting in Hanover has been received from the I.E.S. of Germany. The meeting is to be held from October 9-10, and the subjects of the papers to be presented will include the physics of light production, generation of light by electroluminescence, colour and the colour rendering properties of the fluorescent lamps, photometry of fluorescent lamps, street lighting, the whole being an interesting and varied programme. Those wishing to attend should communicate with Prof. Dipl.-Ing. Ludwig Schneider, (14a), Heidenheim/Brenz, Bahnhofstrasse 2, Germany.

We have received a number of enquiries regarding the booklet on fluorescent street lighting in Germany, to which reference was made in Notes and News last month. Copies of this booklet may be obtained from Lichttechnischen Gesellschaft, Berlin-Borsigwalde, Eichborndamm 141-167, Berlin, Germany.

ODDIE FASTENERS

PAT. 507249



The Fastener with Endless Applications
SIMPLE—POSITIVE—SELF LOCKING
Made in a variety of types and sizes

SPECIAL FASTENERS TO SUIT CUSTOMERS' REQUIREMENTS.

USED EXTENSIVELY BY THE LEADING MANUFACTURERS IN THE LIGHTING AND ELECTRICAL INDUSTRIES.

DEPT. L. L.
ODDIE BRADBURY & CULL LTD.
SOUTHAMPTON

TEL : 55883 CABLES : FASTENERS, SOUTHAMPTON

I.E.S. ACTIVITIES

Regional Chairmen—Session 1952-1953



Bath and Bristol

Mr. R. S. Hazell joined the I.E. Dept. of the G.E.C. at Cardiff and was with their Bristol branch from 1931 until July, 1949. Since then he has been the Revo Electric Company's representative in the Bristol area. He is a Registered Lighting Engineer and has been

Hon. Sec. of the Centre for the last seven years, an office he is now relinquishing.

Birmingham

Dr. E. H. Norgrove was educated at Bishop Vesey's Grammar School and Birmingham University. He is a member of the I.E.E. and a part-time lecturer at the Birmingham College of Technology. Dr. Norgrove is switch and control gear engineer with George Ellison Ltd., and technical consultant to a group of companies.



Cardiff

Mr. A. J. Dalton, A.M.I.E.E., received his early training at Weymouth and Newcastle. He moved to Dorset in 1922 and in 1934 became Deputy Borough Electrical Engineer of Dorchester. In 1936 he was appointed Engineer and Manager of the Milford Haven undertaking and is now with the Commercial Dept. of the South Wales Board.



Edinburgh

Dr. H. Buckley has been a member of the I.E.S. since 1923 and was President in 1943. He was with the N.P.L. from 1919 until 1944, when he went to the Intelligence Division of D.S.I.R. Since 1947 he has been in charge of the D.S.I.R. Edinburgh office.



Glasgow

Mr. C. J. King was for a short time with the L.S.B. in London and in 1946 took over the L.S.B. in Glasgow. Since relinquishing that appointment last year he has been in private practice as a consultant and is also Editor of the *Scottish Electrical Engineer*. Other activities include the T.A. and the Scottish Branch of the Engineers' Guild.



Gloucester and Cheltenham

Mr. H. V. Sayce has been connected with the lighting industry since 1912, when he joined the B.T.H. Birmingham office. After serving throughout the 1914-18 war he spent several months at the Rugby fittings factory, afterwards being appointed an outside representative. In 1935 he opened the company's Cheltenham office. He is a founder member of the Centre.



Leeds

Mr. J. H. Weaver is at present Northern Area Manager of Edmundsons Electric Co. Ltd., of London. At the time of nationalisation of the supply industry he was manager of the contracts dept. of Electricity House Ltd. He has been engaged in the application of light in industry and commerce for over 28 years.



Leicester

Mr. H. J. Rigg studied electrical engineering at the Leeds Technical College. He subsequently served with Crompton Parkinson, Ltd., and the Brush Engineering Co. Ltd. After the war he joined the Benjamin Electric Co. Ltd.





Liverpool

Mr. A. V. Milton is a director of the firm of A. V. Milton & Co. Ltd., which he started in 1931, previous to which he had held managerial positions with Boothroyd Repairs Ltd. He has played a leading part in the activities of the I.E.E. and E.C.A. in the Merseyside area.

Manchester

Mr. Harry Hewitt was formerly with Siemens and is now lighting specialist with the North Western Electricity Board. He is part-time lecturer in illuminating engineering at the Manchester College of Technology and serves on the I.E.S. Education Committee. His book "Modern Lighting Technique" has just been published. He is also an accomplished broadcaster.



Newcastle-on-Tyne

Mr. S. Kingsley-Lark commenced his career in the instrument department of Johnson and Phillips. He specialised in discharge tube circuits gaining experience with several firms and was Senior Technical Assistant at Claude

General Neon Lights at the outbreak of war. He was then transferred to the Development Laboratory of M.O. Value Co. Ltd., and later to Redifon. He is now Technical Director of Inductive Appliances, Ltd.

Nottingham

Mr. P. L. Ross received his early training with the G.E.C. and later with Philips Lamps Ltd. After the war he joined the B.T.H. Co., and in 1946 was appointed senior lighting engineer of their Sheffield area, which includes Nottingham. He is on the Register of Lighting Engineers.



Huddersfield

Mr. N. Schofield was with the Sheffield Corporation Lighting Department from 1925 until 1947, when he was appointed Public Lighting Assistant to the Borough Engineer of Huddersfield. He was awarded the Silver Medal of the City & Guilds of London Institute for the illuminating engineering examination in 1940. He is a Fellow of the Society.



North Lancashire

Mr. J. D. Ducker, after his apprenticeship and after some time with an electrical contracting firm, served with the Douglas (I.O.M.) Corporation Electricity Dept. from 1924 until 1939, when he joined the Benjamin Electric Ltd. as their sales engineer in North Lancashire. He is a Registered Lighting Engineer and a founder member and first Chairman of the North Lancashire Group.

Sheffield

Mr. H. Dick is with the Sheffield Corporation Transport Department as Equipment Engineer and Overhead Line Superintendent, a position he has held since 1948. He has been a member of the Society for some years and has taken an active interest in the affairs of the Centre. He is particularly interested in the scientific applications of light.



Swansea

Mr. G. J. Higgs, A.M.I.E.E., was first Chairman of the Group when it was formed in 1949. He received his early training with the G.E.C. at Coventry and went to South Wales in 1932. He spent the war years with the Air Ministry and was subsequently assistant sales engineer with Cardiff Corporation. He is now Commercial Manager of Swansea District.

Forthcoming I.E.S. Meetings

LONDON

October 14th

Sessional Meeting. Presidential Address, by W. J. Wellwood Ferguson. (At the Royal Institution, Albemarle Street, W.1) 6 p.m.

October 29th

Visit to the Ford Motor Company's Works, Dagenham.

CENTRES AND GROUPS

October 1st

EDINBURGH—"Lighting for Inspection," by H. E. Bellchambers. (At the Welfare Club Hall of the City of Edinburgh Lighting and Cleansing Department, 357, High Street, Edinburgh.) 7 p.m.

NEWCASTLE—Chairman's Address, by G. Kingsley-Lark. (At the Minor Durrant Hall, Oxford Street, Newcastle-on-Tyne, 1.) 6.15 p.m.

SWANSEA—Chairman's Address, by G. J. Higgs. (At the Minor Hall, Y.M.C.A., Swansea.) 6 p.m.

October 2nd

GLASGOW—"Lighting for Inspection," by H. E. Bellchambers. (At the Institution of Engineers and Shipbuilders in Scotland, 39, Elmbank Crescent, Glasgow, C.2.) 6.30 p.m.

NOTTINGHAM—Chairman's Address, by P. L. Ross. (At the Demonstration Theatre of the East Midlands Electricity Board, Smithy Row, Nottingham.) 6 p.m.

BRADFORD—"Textile Lighting," by A. G. Smith. (At the Yorkshire Electricity Board, 45-53, Sunbridge Road, Bradford.) 7.30 p.m.

EXETER—"Lighting for the Prevention of Industrial Accidents," by E. W. Murray. (At the Providence Hall, Northernhay Street, Exeter.) 7 p.m.

October 3rd

BATH AND BRISTOL—"Lighting for the Prevention of Industrial Accidents," by E. W. Murray. (At the South Western Electricity Board Lecture Theatre, Old Bridge, Bath.) 7 p.m.

BIRMINGHAM—Chairman's Address, by E. H. Norgrove. (At Regent House, St. Philip's Place, Colmore Row, Birmingham.) 6 p.m.

HUDDERSFIELD—"Some Aspects of Department Store Lighting," by A. W. Jervis. (At the Electricity Showroom, Market Street, Huddersfield.) 7.15 p.m.

October 9th

MANCHESTER—"Home Lighting," by Miss M. D. Wardlaw. (Joint Meeting with the E.A.W.) (At the Demonstration Theatre of the North Western Electricity Board, Town Hall Extension, Manchester.) 6 p.m.

SHEFFIELD—"Hospital Lighting," by M. W. Peirce and D. J. Reed. (At the Medical Library, The Sheffield University, Western Bank, Sheffield, 10.) 6.30 p.m.

October 15th

TEES-SIDE—"Black Light," by H. L. Privett. (At the Cleveland Scientific and Technical Institution, Corporation Road, Middlesbrough.) 6.30 p.m.

October 16th

GLOUCESTER AND CHELTENHAM—Annual Dinner

October 21st

LIVERPOOL—Chairman's Address, by A. V. Milton. (At the Lecture Theatre of the Merseyside and North Wales Electricity Board's Service Centre, Whitechapel, Liverpool, 1.) 6 p.m.

STOKE-ON-TRENT—"Exterior Lighting for Coronation Year," by F. Jamieson. (At the Lecture Hall of the Midlands Electricity Board, 31, Kingsway, Stoke-on-Trent.) 6 p.m.

October 22nd

NORTH LANCASHIRE—Presidential Address, by W. J. Wellwood Ferguson. (At the Preston and District Chamber of Commerce, 49a, Fishergate, Preston.) 7.15 p.m.

October 27th

LEEDS—"Lighting the Streets," by H. E. G. Watts. (At the Lighting Service Bureau, 24, Aire Street, Leeds, 1.) 6.15 p.m.

October 31st

BIRMINGHAM—"The Evaluation of Lighting," by R. G. Hopkinson. (At Regent House, St. Philip's Place, Colmore Row, Birmingham.) 6 p.m.

CARDIFF—Annual Supper Dance. (At the Royal Hotel, Cardiff.)

I.E.S. Visit

A visit to the Ford Motor Company works at Dagenham will take place on the afternoon of Wednesday, October 29. A comprehensive tour of the works has been arranged. In addition to seeing the manufacturing processes carried out, the visit will also enable members of the party to see a considerable amount of factory lighting before the meeting on this subject, to be held on November 11.

The party will leave 32, Victoria-street, by coach at 12.45 p.m. and arrive at Dagenham at 2 p.m. The party will arrive back in London at about 6.30 p.m. The return fare will be 3s. 6d.

Those wishing to take part should apply to the I.E.S. Secretary, enclosing cheque or postal order to cover fare.

SITUATION VACANT

SALES ENGINEER required by Lighting Fittings Manufacturers for London area. Connection with architects and consultants preferred.—Apply, with full details and in confidence, including salary required, to Box No. 837.

Course in Illumination

An illumination design course is to be held at the Lighting Service Bureau, 24, Aire-street, Leeds, 1, on consecutive Wednesday evenings, from October 8-November 12, 1952. Applications for reservations should be made to Mr. J. W. Howell, at the Leeds Bureau.

Rigid Polyvinyl Chloride Sheet

Several manufacturers in Great Britain are now using white rigid polyvinyl chloride (p.v.c.) sheet for interior lighting fittings of various designs. The material has many advantages for this application, including high reflectivity, good mechanical strength and excellent resistance to chemical attack, making it particularly suitable for fittings used in the corrosive atmospheres typical of many heavy industries.

Polyvinyl chloride has hitherto been more widely known in its flexible, plasticised forms, one of the many very important uses being the insulation of cable. The more recently developed rigid, unplasticised form is available in sheet form in a range of thicknesses and colours, including white. Rigid p.v.c. sheet is characterised by excellent chemical resistance and very high impact strength. Because of this high impact strength, rigid p.v.c. sheet only 1-16 in. thick has been found suitable for the manufacture of robust lighting fittings.

Although opaque, and therefore lacking the upward light component which is an important advantage of opal "Perspex" reflectors, the optical properties of white rigid p.v.c. compare very favourably with those of stove-enamelled and vitreous-enamelled steel. It has a reflection factor of approximately 85 per cent., with very little variation between batches. As there is no risk of chipping, with consequent base-metal corrosion, and the material does not deteriorate with age, rigid p.v.c. fittings maintain their optical performance for a long time.

Rigid p.v.c. sheet is worked in a similar fashion to "Perspex." It can be cut with normal power-driven woodworking tools and machined on standard lathes. Special cements are available for jointing, and the material can be welded. Being thermoplastic, it softens on being raised to a sufficiently high temperature and can then be shaped by pressing or blowing. It retains the imposed shape on cooling. Many of the rigid p.v.c. lighting fittings made so far are similar in design to those made from "Perspex," though certain modifications have been necessary to allow for the greater flexibility of the new material.

The thermoplastic nature of the material imposes a limit on the working temperature of rigid p.v.c. lighting fittings. They must be so designed that no part operates at temperatures higher than 55 deg. C.

Trade Literature

KNIGHTSHADES, LTD.—New season's list of range of table lamps, fittings, bed-lights and lampshades. Details given of extended range of shades in new material, "Cream Nylux."

GENERAL ELECTRIC CO., LTD.—Booklet on modern lighting fittings for domestic use as well as in hotels, restaurants and other public buildings. Also illustrated pamphlet on lighting fittings in "Chrysaline," and another on cold cathode fluorescent tubes.

BRITISH THOMSON-HOUSTON CO., LTD.—New Mazda lamp catalogue giving full information on the many types of lamps manufactured by this Company. Purchase tax table included.

SIMPLEX ELECTRIC CO., LTD.—Leaflet on their "Fiesta-Flood" now available in readiness for Coronation year.

EDISON SWAN ELECTRIC CO., LTD.—Leaflet on new range of B.C. polished brass lampholders. Prices are shown.

SIEMENS ELECTRIC LAMPS AND SUPPLIES, LTD.—New and comprehensive catalogues of the complete ranges of Siemens industrial and commercial lamps and lighting equipment. Also new industrial fittings list, No. 1,013.

THORN ELECTRICAL INDUSTRIES, LTD.—Folder AL/115, giving facts and figures on the performance of Atlas fluorescent lamps. Prices and ranges also included. Also leaflet AL/96 D on fluorescent lighting units, lamps and control gear, and quickstart units.

METROPOLITAN-VICKERS ELECTRICAL CO., LTD.—Brochure on lamp range, giving full details, prices and illustrations of products described.

GENERAL ELECTRIC CO., LTD.—Booklet describing the process of manufacture of tungsten and fluorescent lamps at the Company's factory at Wembley. Also Part 1 of an informative catalogue on "Osram" lamps and tubes, including sections on general lighting service, special lighting service, technical details, gear tables, etc. Revised price list also issued.

CROMPTON PARKINSON, LTD.—Leaflets on two of their 5-ft. commercial fittings, the "Abbey" and the "Alton."

ISABELLEN-HUTTE (Germany).—Leaflets on electrical resistance alloys.

EKCO-ENSIGN ELECTRIC, LTD.—Catalogue on Ekco industrial lighting equipment, including dispersive reflectors, local lighting reflectors, angle reflectors, well glass lanterns, bulkhead fittings, floodlights and accessories.

Personal

Fellowship of the American I.E.S. has been awarded to Mr. J. M. Waldram, a past president of the British Society. Mr. Waldram's work on street lighting and the work he has done on visibility under various conditions is well known in this country, and this recognition of his work by our friends across the Atlantic is a matter of gratification to lighting engineers in this country. Mr. Waldram is now the only person who is a Fellow of both the British and American Societies.

R.P.S. Annual Exhibition

The Royal Photographic Society's 97th annual exhibition was opened on Thursday, September 11, 1952, by the American Ambassador, Mr. W. S. Gifford. The exhibition, which is held in the Society's House, 16, Princes Gate, S.W.7, will remain open to the public without charge until Sunday, October 12, 1952, inclusive, from 10 a.m. to 8 p.m. each day (Saturdays, 10 a.m. to 5.30 p.m.; Sundays, 2.30 to 5.30 p.m.). The exhibition will close at 6 p.m. on Tuesdays, so that the miniature colour transparencies can be projected, with commentary, at 7 p.m.

The Society's annual exhibition is recognised as the premier photographic exhibition, comprising as it does all types of photograph. Over 5,000 entries were received, of which 849 have been accepted. There are ten sections of the exhibition.

The purpose of the exhibition is to show work which provides a fair cross-section of contemporary photography, as shown by the material which is submitted for consideration.

After the London display the whole of the exhibition will be transferred to Leeds, where it will be opened by H.R.H. The Princess Royal in the City Art Gallery on Saturday, October 25, and will remain open to the public until Sunday, November 23. Thence it will go to Bristol where Lord Methuen will open it in the Art Gallery on Saturday, December 6, until Wednesday, December 31.

SYMPOSIUM ON SEARCHLIGHTS

Comprehensive papers by experts on beam-projection systems, including design and performance, methods of photometry in daylight and the effects of atmospheric scatter. (164 pages with 116 diagrams and illustrations.)

'... the six papers in the symposium form a valuable record of progress since 1939, both in searchlight design and in our knowledge of the factors affecting their efficient use.'

The Times Review of Industry

'These papers... make interesting reading and contain a great deal of information which is not available elsewhere...'

Engineering

'... book of value to any studio engineer.'

Kinematograph Weekly

'This book should be on the "Must be read" list of everyone engaged in military searchlight development and application.'

Journal of the Optical Society of America

'... a record which will find a place in many industrial and technical libraries.'

Nature

Price 17s. 6d.

from

**THE ILLUMINATING
ENGINEERING SOCIETY**

32, Victoria Street, London, S.W.1.

POSTSCRIPT

By "Lumeritas"

Last month I quoted some remarks of an architect upon the use of bare fluorescent lamps for lighting buildings constructed with concrete shell roofs. Since then I have seen in the *International Lighting Review* an excellent illustration of a bare fluorescent lamp installation in such a building. The roof is of the saw-tooth variety, the unglazed portion in each bay being arched, instead of straight, as is usual in earlier buildings of this kind. Two rows of bare lamps are mounted transversely on each vaulted section of the roof, the lower rows being about 20 ft. above floor level. These lamps were easily installed because the lighting system was planned with the structure and, accordingly, suitably located wooden props were cast into the concrete shell. A further feature of the structure is the recessing of the undersides of the valley beams, so that a row of two-lamp fittings could be built into each of these beams: these lamps are 15 ft. above floor level. The installation appears to be an excellent one visually.

The August issue of the *American Illuminating Engineering*, reached me soon after I had read the Editorial in September's *Light and Lighting*, and so my attention was attracted to the report it contains on a survey of United States and Canadian colleges offering illumination courses. It appears from this survey that, since 1935, there has been some "regression in interest of colleges in specialised training in illumination for electrical students," and that the explanations for this, forthcoming from college professors, "mostly boil down to the market demand for their product—the graduate," since "it appears that not many job opportunities are definitely predicated on lighting specialisation in college." So it is not only on this side of the Atlantic that, as yet, recognition of lighting as a speciality, and the employment of properly trained lighting engineers, falls short of what is desirable.

Since my reference, in July, to the special bus tours of London for those wishing to see the floodlighting, more than 42,000 people have made use of this service. The skilful floodlighting of suitable buildings and other features of the landscape never fails to lend enchantment to the night scene, and

to me, at any rate, it makes a far greater appeal than did the "fairy lights" outlines I remember seeing on very special occasions as a youngster. Not that I am insensitive to the attractions of modern multi-lamp festive "illuminations," though the gaiety they foster is more transient, more exhausting, and less satisfying than the enjoyment that comes from the spectacle of outstanding softly luminous masses. The suggestion has recently been made, in a technical journal, that the Coronation might take place at night by an extensive use of floodlighting. The idea is prompted by the uncertainty of bright weather, whereas artificial lighting can be arranged as desired. The idea is perhaps far-fetched, and there is not the slightest chance that it will be put into practice. Nevertheless, leaving aside the reason advanced for it, it is not difficult to imagine how spectacular such an event could be made if reliance had to be put on artificial lighting.

Some weeks ago I nearly bought a book on the "art of illumination," but upon opening it to see its scope, I discovered it had nothing to do with the kind of illumination (symbol, E) I had in mind. It was, in fact, concerned with the art of decorating manuscripts. Again, some days ago, my eye was caught by the headline, "The Age of Light," at the top of a column in a popular daily newspaper. Here, I thought, was an article "up my street," though it turned out to be a religio-moral discourse. Perhaps it is just on that account that I should have read it! But these two occurrences provide a reminder of the different usage of words which we, who are concerned with lighting, use in what we think is the only really legitimate sense. Still, I did think "The Age of Light" was a bit misleading, though, inconsistently enough, I wouldn't have expected an article headed "The Dark Ages" to have any reference to darkness, except intellectual "darkness"!

In another "daily" I noticed a report of the explosion of a 1,500-watt lamp during a boxing match at Wembley Town Hall. The two boxers and the referee were showered with glass, but, fortunately, they were not injured. This seems to have been an application demanding the use of a vizored fitting.

reater
utlines
asions
nsitive
-lamp
gaiety
haust-
yment
inding
on has
urnal,
ce at
hting.
nty of
ghting
dea is
ot the
into,
e the
ult to
event
out on

book
upon
red it
llumi-
t was,
rating
y eye
ge of
opular
as an
ed out
aps it
have
rovide
words
hting,
really
e Age
ough,
have
Dark
kness,

ort of
ring a
The
wered
e not
n an
ized